

Policy Use Case	Audience	Level of Detail
RF Strength in Geographic	Individuals (Researchers)	Raw records including: <ul style="list-style-type: none"><li>- signal strength</li><li>- lat/long</li><li>- cell tower ID</li><li>- cell phone type</li><li>- service company</li><li>- infrastructure company</li><li>- timestamp</li><li>- service type</li></ul>

Geographic  
Block

Public

Specific statistical information:

- time series of signal strength for:
  1. geographic regions (states, counties, etc.)
  2. service provider
  3. phone type
  4. infrastructure provider
  5. combinations thereof
- interesting statistical findings by researchers

Note that the specific service, phone, infrastructure groups can be decomposed to provider general time series info and statistics.

\* C/U/D = Collection, Use or Disclosure

Functionality	Timeliness	Duration
<p>General tasks related to signal strength monitoring:</p> <ul style="list-style-type: none"><li>- broadly examine trends in time, space, phone type, etc.</li><li>- examine these trends in context of world events (hurricanes, earthquakes, etc.)</li></ul>		
	Near-real time	Approx. Duration of Data Collection

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Providing general policy-making and consumer information with insights into wireless handset operations as indicated by service, infrastructure, phone type, or geographic area.

Released upon completion of data collection

Indefinite

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Output	Nature of the Data (What)
<p>Scientific publications, public policy (disasters, wireless spectrum, etc)</p>	<p>Measurement records indicating handset location, signal strength in relation to currently associated tower, and general attributes. Several measurement samples are collected over time for each handset/user.</p> <p>Identifiability concerns:</p> <ol style="list-style-type: none"> <li>1. Indirect viz. geographic and temporal behavior by internal row filtering or external linkage</li> </ol>

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Records indicating aggregated signal strength measures taken over time. Aggregations performed over one or more handset attribute or geographic locale.

Broad public awareness and education

Identifiability concerns:

1. Indirect viz. unique aggregation of attributes that narrows data to single or small number of handsets in a geographic area.

Provider Obligations	Nature of Participants (Who)
	Stakeholder Recipient Capability
<p>Primary provider entities are the FCC and SamKnows, which acts as an agent of the FCC in the collection, storage, and disclosure of the data.</p> <p>FCC:</p> <ol style="list-style-type: none"> <li>1. legal/regulatory obligations</li> <li>2. contractual obligations (privacy policy and code of conduct)</li> <li>3. ethical obligations (informed consent, minimize risk to individuals/maximize benefit to society, fairness in selection of study subjects, equitable distribution of study benefits)</li> </ol> <p>Sam Knows:</p> <ol style="list-style-type: none"> <li>1. legal/regulatory obligations (e.g., ECPA? Communications Act?), including agency liability</li> <li>2. contractual obligations (privacy policy and code of conduct)</li> <li>3. ethical obligations (informed consent, minimize risk to individuals/maximize benefit to society)</li> </ol>	<p>Intended recipients are highly-skilled researchers in the domains of networks, wireless, and security associated with legitimate institutions.</p> <p>Knowledge:</p> <ol style="list-style-type: none"> <li>1. significant access to internal background or external information that can re-sensitize the disclosure controlled data</li> </ol> <p>Skills:</p> <ol style="list-style-type: none"> <li>1. possess high degree of technical proficiencies or insight into the nature of the data to re-sensitize data</li> </ol> <p>Ability:</p> <ol style="list-style-type: none"> <li>1. significant computational resources, time and effort availability, and/or financial capacity needed to re-sensitize the data</li> </ol>

Primary provider entities are the FCC and SamKnows, which acts as an agent of the FCC in the collection, storage, and disclosure of the data.

FCC:

1. legal/regulatory obligations
2. contractual obligations under privacy policy and code of conduct
3. ethical obligations (e.g., informed consent, minimize risk to individuals/maximize benefit to society, fairness in selection of study subjects, equitable distribution of study benefits)

Sam Knows:

1. legal obligations as an agent of FCC (e.g. ECPA, Comm Act CPNI)
2. contractual obligations under privacy policy and code of conduct
3. ethical obligations (e.g., informed consent, minimize risk to individuals/maximize benefit to society)

Intended recipients comprise a wide range of entities, including wireless customers, news organizations, government and state-sponsored organizations, and independent researchers. Given range of entities, must assume high level of knowledge, skills, and abilities. Though, this is likely to be the overwhelming minority of users.

Knowledge:

1. significant access to internal background or external information that can re-sensitize the disclosure controlled data

Skills:

1. possess high degree of technical proficiencies or insight into the nature of the data to re-sensitize data

Ability:

1. significant computational resources, time and effort availability, and/or financial capacity needed to re-sensitize the data



Stakeholder Recipient Motivation	Nature of Use (Why)
<p>Recipients are strongly motivated to use the data only as intended and to minimize exposure of the data to potential disclosure due to formal and informal enforcement viz. legal, contractual, and reputational repercussions</p> <p>Intent:</p> <ol style="list-style-type: none"> <li>1. primary research use does not require or motivate deliberate attacks on disclosure controls</li> </ol> <p>Motivation:</p> <ol style="list-style-type: none"> <li>1. high levels of risk reduce motivation to violate policy controls on data</li> </ol>	<p>Well-defined research projects related to the identification of interesting or unique wireless performance indicators, correlations with real-world events, or analysis of cell coverage areas.</p> <p>Use of data constrained by:</p> <ol style="list-style-type: none"> <li>1. laws/regs restricting collection, use, disclosure purposes</li> <li>2. private agreements (privacy policy, code of conduct, etc.) restricting collection, use, disclosure purposes</li> <li>3. ethical concerns that prohibit secondary uses</li> <li>4. industry and community standards (e.g., NTIA code of conduct, OECD Fair Information Practice)</li> </ol>

Recipients may have strong motivation and intent to re-sensitize or otherwise subvert implemented disclosure controls. Motivations may include fame/notoriety, commercial exploitation, or political embarrassment. Recipients may include those with malicious intent to identify users within the data

Examination of general trends in phone usage and relationships between attributes/general location and signal strength.

Intent:

1. strong potential for malicious intent to reveal sensitive information or subvert controls in order to cause harm to handset users

Use of data constrained by:

1. private agreements (ToU, T&C) restricting collection, use, disclosure purposes
2. ethical expectations derived from community standards (e.g., NTIA code of conduct, OECD Fair Information Practice)

Motivation:

1. may be motivated by financial, reputational, or other external factors to reveal handset user locations and behaviors